Analytical Data Package Prepared For

Pacific Northwest National Lab

Radiochemical Analysis By

STL Richland STLRL

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains 44 Pages

Report Nbr: 28816

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04628	U05-006	B1CLL4	J5D270327-1	G9A7L1AA	9G9A7L10	5118294
		B1CLL4	J5D270327-1	G9A7L1AC	9G9A7L10	5118295
		B1CLN4	J5D270327-2	G9A7N1AA	9G9A7N10	5118294
		B1CLN4	J5D270327-2	G9A7N1AC	9G9A7N10	5118295
		B1CLN0	J5D270340-1	G9A9E1AA	9G9A9E10	5118294
		B1CLN0	J5D270340-1	G9A9E1AC	9G9A9E10	5118295
		B1CLN2	J5D270340-2	G9A9H1AA	9G9A9H10	5118294
		B1CLN2	J5D270340-2	G9A9H1AC	9G9A9H10	5118295
		B1CLM8	J5D270340-3	G9A9L1AA	9G9A9L10	5118294
		B1CLM8	J5D270340-3	G9A9L1AC	9G9A9L10	5118295
		B1CLL6	J5D270340-4	G9A9R1AA	9G9A9R10	5118294
		B1CLL6	J5D270340-4	G9A9R1AC	9G9A9R10	5118295
		B1CLM6	J5D270340-5	G9A9W1AA	9G9A9W10	5118294
		B1CLM6	J5D270340-5	G9A9W1AC	9G9A9W10	5118295
		B1CLM0	J5D270340-6	G9A901AA	9G9A9010	5118294

Comments: paginated on copier JW 5/13/05

Report Nbr: 28816

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04628	U05-006	B1CLM0	J5D270340-6	G9A901AC	9G9A9010	5118295
		B1CLM4	J5D270340-7	G9A921AA	9G9A9210	5118294
		B1CLM4	J5D270340-7	G9A921AC	9G9A9210	5118295
		B1CLL8	J5D270340-8	G9A951AA	9G9A9510	5118294
		B1CLL8	J5D270340-8	G9A951AC	9G9A9510	5118295
		B1CLM1	J5D270340-9	G9A991AA	9G9A9910	5118294
		B1CLM1	J5D270340-9	G9A991AC	9G9A9910	5118295

Comments:

SEVERN TRENT STL

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Richland, WA 99354

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Certificate of Analysis

Pacific Northwest National Laboratories
Sigma V Building
Richland, WA 99352

May 13, 2005

Attention: Dot Stewart

SAF Number	:	U05-006
Date SDG Closed	:	April 27, 2005
Number of Samples	:	Eleven (11)
Sample Type	:	Water
SDG Number	:	W04628
Data Deliverable	:	15-Day / Priority

CASE NARRATIVE

I. Introduction

On April 27, 2005, eleven water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

PGW ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B1CLL4	G9A7L	WATER	4/27/05
B1CLN4	G9A7N	WATER	4/27/05
B1CLM8	G9A9L	WATER	4/27/05
B1CLN2	G9A9H	WATER	4/27/05
B1CLN0	G9A9E	WATER	4/27/05
B1CLM1	G9A99	WATER	4/27/05
B1CLL8	G9A95	WATER	4/27/05
B1CLM4	G9A92	WATER	4/27/05
B1CLM0	G9A90	WATER	4/27/05
B1CLM6	G9A9W	WATER	4/27/05
B1CLL6	G9A9R	WATER	4/27/05

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Liquid Scintillation Counting
Technetium-99 by method RICH-RC-5065
Laser Induced Phosphorimetry
Total Uranium by method RICH-RC-5058

IV. Quality Control

The analytical results for each analysis performed under SDG W04628 includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Liquid Scintillation Counting
Technetium-99 by method RICH-RC-5065:
The LCS, batch blank, samples and sample duplicate (B1CLN0), and sample matrix spike (B1CLN0) results are within contractual requirements.

Laser Induced Phosphorimetry
Total Uranium by method RICH-RC-5058:
The LCS, batch blank, samples, sample duplicate (B1CLL4), and sample matrix spike (B1CLL4) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

for Becky Warrington
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

STL Richland Report

Lab Code: STLRL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 28816 File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A7L10	B1CLL4		MW6-SBB-A1	U05-006	W04628					04/27/2005 11:20

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	1.14E+03	pCi/L	1.9E+01	7.3E+01		1.04E+01	100.0	TC99_ETVDSK_LS	1.286E-01	L	05/11/200 12:06	I
5118295	Uranium	7440-61-1	4.00E+01	ug/L	4.7E+00	4.7E+00		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 09:22	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A7N10	B1CLN4		MW6-SBB-A1	U05-006	W04628					04/27/2005 09:54

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	1.32E+02	pCi/L	7.6E+00	1.4E+01		1.06E+01	100.0	TC99_ETVDSK_LS	1.278E-01	L	05/11/200 13:08	I
5118295	Uranium	7440-61-1	1.39E+00	ug/L	1.4E-01	1.4E-01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 09:52	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9010	B1CLM0		MW6-SBB-A1	U05-006	W04628					04/27/2005 10:19

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	4.52E+02	pCi/L	1.2E+01	3.2E+01		1.05E+01	100.0	TC99_ETVDSK_LS	1.29E-01	L	05/11/200 21:27	I
5118295	Uranium	7440-61-1	7.90E+01	ug/L	9.4E+00	9.4E+00		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 10:57	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9210	B1CLM4		MW6-SBB-A1	U05-006	W04628					04/27/2005 10:45

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	2.08E+02	pCi/L	9.0E+00	1.8E+01		1.06E+01	100.0	TC99_ETVDSK_LS	1.254E-01	L	05/11/200 22:29	I
5118295	Uranium	7440-61-1	9.35E+01	ug/L	1.1E+01	1.1E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 11:02	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9510	B1CLL8		MW6-SBB-A1	U05-006	W04628					04/27/2005 12:11

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	3.20E+02	pCi/L	1.1E+01	2.5E+01		1.03E+01	100.0	TC99_ETVDSK_LS	1.291E-01	L	05/12/200 00:34	I
5118295	Uranium	7440-61-1	1.85E+02	ug/L	2.2E+01	2.2E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 11:18	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9910	B1CLM1		MW6-SBB-A1	U05-006	W04628					04/27/2005 10:19

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	4.89E+02	pCi/L	1.3E+01	3.5E+01		1.05E+01	100.0	TC99_ETVDSK_LS	1.284E-01	L	05/12/200 01:36	I

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

5118295	Uranium	7440-61-1	7.76E+01	ug/L	9.2E+00	9.2E+00	8.38E-02	UTOT_KPA	2.50E-02	ML	05/09/200	11:23 I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9E10	B1CLN0		MW6-SBB-A1	U05-006	W04628					04/27/2005 09:57

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	2.73E+02	pCi/L	1.0E+01	2.2E+01		1.06E+01	100.0	TC99_ETVDSK_LS	1.274E-01	L	05/11/200 14:11	I
5118295	Uranium	7440-61-1	1.97E+02	ug/L	2.3E+01	2.3E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 10:01	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9H10	B1CLN2		MW6-SBB-A1	U05-006	W04628					04/27/2005 11:37

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	5.05E+00	pCi/L	4.5E+00	6.2E+00	U	1.06E+01	100.0	TC99_ETVDSK_LS	1.264E-01	L	05/11/200 17:18	I
5118295	Uranium	7440-61-1	1.33E+00	ug/L	1.4E-01	1.4E-01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 10:04	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9L10	B1CLM8		MW6-SBB-A1	U05-006	W04628					04/27/2005 09:01

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	1.29E+02	pCi/L	7.6E+00	1.4E+01		1.07E+01	100.0	TC99_ETVDSK_LS	1.264E-01	L	05/11/200 18:20	I
5118295	Uranium	7440-61-1	1.21E+02	ug/L	1.4E+01	1.4E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 10:14	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9R10	B1CLL6		MW6-SBB-A1	U05-006	W04628					04/27/2005 09:34

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	6.07E+03	pCi/L	4.3E+01	3.6E+02		1.07E+01	100.0	TC99_ETVDSK_LS	1.26E-01	L	05/11/200 19:22	I
5118295	Uranium	7440-61-1	3.01E+02	ug/L	3.6E+01	3.6E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 10:23	I

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9G9A9W10	B1CLM6		MW6-SBB-A1	U05-006	W04628					04/27/2005 09:59

Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	1.45E+03	pCi/L	2.1E+01	9.1E+01		1.05E+01	100.0	TC99_ETVDSK_LS	1.273E-01	L	05/11/200 20:25	I
5118295	Uranium	7440-61-1	3.51E+02	ug/L	4.2E+01	4.2E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 10:40	I

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9DQ61AB	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 09:57
Client Id:	NA	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	BLK		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AP	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118294	TC-99	3.46E+00	pCi/L	6.2E+00	U	1.08E+01	100.0		TC99_ETVDSK	1.25E-01	05/12/2005				D
BLK	14133-76-7			4.5E+00						L	02:38				

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9DRG1AB	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 11:20
Client Id:	NA	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	BLK		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AR	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118295	Uranium	-6.47E-03	ug/L	7.9E-04	U	8.38E-02			UTOT_KPA	2.50E-02	05/09/2005				D
BLK	7440-61-1			7.9E-04						ML	09:05				

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9DQ61CS	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 09:57
Client Id:	NA	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	**BS**		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AQ	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118294	TC-99	4.76E+02	pCi/L	3.4E+01		1.08E+01	100.0	5.48E+02	TC99_ETVDSK	1.25E-01	05/12/2005			70	D
BS	14133-76-7			1.3E+01				86.9		L	03:41			130	

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9DRG1CS	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 11:20
Client Id:	NA	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	**BS**		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AS	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118295	Uranium	3.43E+01	ug/L	4.1E+00		8.38E-02		3.62E+01	UTOT_KPA	2.50E-02	05/09/2005			70	D
BS	7440-61-1			4.1E+00				95.0		ML	09:09			130	

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9DRG1DS	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 11:20
Client Id:	NA	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	BS		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AT	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118295	Uranium	3.36E+01	ug/L	3.4E+00		8.38E-02		3.62E+01	UTOT_KPA	2.50E-02	05/09/2005			70	D
BS	7440-61-1			3.4E+00				93.0		ML	09:17			130	

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Duplicate Report

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9A7L1ER	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 11:20
Client Id:	B1CLL4	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	DUP		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
U05-006	MW6-SBB-A19981								AM	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118295	Uranium	3.97E+01	ug/L	4.7E+00		8.38E-02			UTOT_KPA	2.50E-02	05/09/2005	.6	0.1		D
DUP	7440-61-1	4.00E+01		4.7E+00						ML	09:49	20.0	3		

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9A9E1ER	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 09:57
Client Id:	B1CLN0	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	DUP		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
U05-006	MW6-SBB-A19981								AO	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118294	TC-99	3.05E+02	pCi/L	2.4E+01		1.05E+01	100.0		TC99_ETVDSK	1.294E-01	05/11/2005	11.2	1.9		D
DUP	14133-76-7	2.73E+02		1.0E+01						L	16:15	20.0	3		

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland Qc Matrix Spike Report

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9A7L1DW	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 11:20
Client Id:	B1CLL4	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	MS		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
U05-006	MW6-SBB-A19981								AL	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118295	Uranium	3.24E+01	ug/L	9.8E+00		8.38E-02		3.60E+01	UTOT_KPA	2.50E-02	05/09/2005			60	D
MS	7440-61-1			9.8E+00				90.0		ML	09:42			140	

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland Qc Matrix Spike Report

FormNbr: R **FormatType:** FEAD **VersionNbr:** 05 **File Name:** h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:	G9A9E1DW	**Sdg/Rept Nbr:**	W04628	28816	**Collection Date:** 04/27/2005 09:57
Client Id:	B1CLN0	**Matrix:**	WATER	WATER	**Sample On Date:**
Moisture/Solids%*:		**QC Type:**	MS		**Received Date:** 04/27/2005

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
U05-006	MW6-SBB-A19981								AN	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
5118294	TC-99	3.09E+03	pCi/L	2.0E+02		1.05E+01	100.0	3.62E+03	TC99_ETVDSK	1.268E-01	05/11/2005			60	D
MS	14133-76-7			3.2E+01				85.2		L	15:13			140	

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
B Qual- Analyte was found in the associated laboratory blank above the MDC.

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

5/13/2005 10:22:00 AM

Lot No., Due Date: J5D270327,J5D270340; 05/12/2005

Client, Site: 384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 5118294; RTC99 Tc-99 by LSC

SDG, Matrix: W04628; WATER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	✓		
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 5-13-05

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5118294

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Melissa Waddell Date: 5/13/05

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

5/10/2005 11:25:38 AM

Lot No., Due Date: J5D270327,J5D270340; 05/12/2005

Client, Site: 384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 5118295; RUNAT UNat by KPA

SDG, Matrix: W04628; WATER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	✓		
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 5-10-05

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 5718295

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		~~✓~~ 5/13/05
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Jackie Waldrell Date: 5/13/05

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # U05-006-3
		Page 1 of 1

Collector DURATEK F.M. HALL	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS-SAWS-H91	**Ice Chest No.** SAWS-203 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Q-57671 JSD270327
W04628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLL4		W	4-27-05	1120	1x20-mL P	Activity Scan	None
B1CLL4		W	1	1	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
B1CLL4		W	1	1	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2
						G9A7L	
				4-27-05			

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
DURATEK F.M. HALL	F.M. Hall	APR 27 2005 1430	Jeff Jensen	Jeff Jensen	APR 27 2005 1430
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **U05-006-1**

Page 1 of 1

Collector DURATEK F. M. HALL	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS-SAWS-491	**Ice Chest No.** SAWS-203 **Temp.**
Shipped To (Lab) Severn Trent Incorporated Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS

** Q-57671 JSD270327
W04628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLN4		W	4-27-05	0954	1x20-mL P	Activity Scan	None
B1CLN4		W	〃	〃	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)	HCl to pH <2
B1CLN4		W	〃	〃	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2
						G9A7N	
				4-27-05			

Relinquished By DURATEK F. M. HALL	Print / Sign	Date/Time 1430 APR 27 2005	Received By Jeff Jensen
Relinquished By		Date/Time	Received By
Relinquished By		Date/Time	Received By
Relinquished By		Date/Time	Received By

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 04 27 05 1420

Client: PRW SDG #: W04627 NA [ ] SAF #: 405-006 NA [ ]

Work Order Number: JSD270827 Chain of Custody # 405-006-1, 3

Shipping Container ID: SAWS 203 Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 6
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   - _____ tape
   - X custody seals
   - _____ hazard labels
   - X appropriate samples labels
9. Samples are:
   - X in good condition
   - _____ broken
   - _____ leaking
   - _____ have air bubbles
   - (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: _____ Date: 04 27 05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # U05-006-21
		Page 1 of 1

Collector D.R. BREWINGTON	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	OTS - SAMS H 93	**Ice Chest No.** SML 584 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** Q-57671 J5D270840
WO4628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLM8		W	4-27-05	0901	1x20-mL P	Activity Scan	None
B1CLM8		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) > G9A9L	HCl to pH <2
B1CLM8		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.R. BREWINGTON	D.R. Brewington		APR 27 2005 1444	Jeff Tenson	Jeff Tenson		APR 27 2005 1444
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **U05-006-29**

Page 1 of 1

Collector D.R. BREWINGTON	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS- SAMPLE H 93	**Ice Chest No.** 9ml 584 **Temp.**
Shipped To (Lab) Severn Trent Incornorated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** Q-57671 JSD270340
WO4628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLN2		W	4-27-05	1137	1x20-mL P	Activity Scan	None
B1CLN2		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) G9A9H	HCl to pH <2
B1CLN2		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	D.R. BREWINGTON		APR 27 2005 1444				APR 27 2005 1444
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **U05-006-25**

Page 1 of 1

Collector D.R. BREWINGTON	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	OTS - SAMS H93	**Ice Chest No.** SMC 584 **Temp.**
Shipped To (Lab) Severn Trent Incornorated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** 57671 JS0270340
WO4628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLN0		W	4-27-05	0957	1x20-mL P	Activity Scan	None
B1CLN0		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) GGA9L	HCl to pH <2
B1CLN0		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	D.R. BREWINGTON		APR 27 2005				APR 27 2005
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # U05-006-10
		Page 1 of 1

Collector R.T. SICKLE	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS-SAWS-H86	**Ice Chest No.** SAWS-113 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** Q-57671 J5D27034 0
W04628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLM1		W	4/27/5	1019	1x20-mL P	Activity Scan	None
B1CLM1		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) > G9A99	HCl to pH <2
B1CLM1		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By R.T. SICKLE Print	Sign APR 27 2005 Date/Time 1430	Received By Print	Sign APR 27 2005 Date/Time 1430
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **U05-006-7**

Page 1 of 1

Collector R.T. SICKLE	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS - SAWS-H86	**Ice Chest No.** SAWS-113 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** Q-57671 JSD270840
W04628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLL8		W	4/27/5	1211	1x20-mL P	Activity Scan	None
B1CLL8		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) > G9A95	HCl to pH <2
B1CLL8		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By R.T. SICKLE Print	Sign APR 27 2005 Date/Time 1430	Received By Print	Sign APR 27 2005 Date/Time 1430
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # U05-006-13
		Page 1 of 1

Collector R.T. SICKLE	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS- SAWS- H86	**Ice Chest No.** SAWS-113 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** Q-57671 JSD270340
W04628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLM4		W	4/27/5	1045	1x20-mL P	Activity Scan	None
B1CLM4		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) G9A92	HCl to pH <2
B1CLM4		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.T. SICKLE			APR 27 2005 1430	Jeff Jansen			APR 27 2005 1430
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	= Drum Solid		
SE	= Sediment	DL	= Drum Liqui		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **U05-006-9**

Page 1 of 1

Collector R.T. SICKLE	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS - SAWS - H86	**Ice Chest No.** SAWS-113 **Temp.**
Shipped To (Lab) Severn Trent Incornorated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
**Q-57671 J5D270340
W04628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLM0		W	4/27/5	1019	1x20-mL P	Activity Scan	None
B1CLM0		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) > G9A90	HCl to pH <2
B1CLM0		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	R.T. SICKLE		APR 27 2005 1430	Jeff Jonson			APR 27 2005 1430
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # U05-006-17
		Page 1 of 1

Collector R.T. SICKLE	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS - SAWS - H86	**Ice Chest No.** SAWS-113 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Q-57671 J5D270340
WO4628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLM6		W	4/27/5	0959	1x20-mL P	Activity Scan	None
B1CLM6		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) > G9A9W	HCl to pH <2
B1CLM6		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.T. SICKLE		APR 27 2005	1430	Jeff Jensen		APR 27 2005	1430
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

35156

C.O.C. # **U05-006-5**

Page 1 of 1

Collector R.T. SICKLE	**Contact/Requester** DL STEWART	**Telephone No.** 509-376-5056 **MSIN** **FAX**
SAF No. U05-006	**Sampling Origin** HANFORD SITE	**Purchase Order/Charge Code**
Project Title 200 UP1 REBOUND, APRIL 2005	DTS-SAWS-H86	**Ice Chest No.** SAWS-113 **Temp.**
Shipped To (Lab) Severn Trent Incorporated, Richland	**Method of Shipment** GOVT. VEHICLE	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 15 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
Q-57671 J5D270340
WO46628 Due 5/12/05

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Batch all PNNL GW samples submitted under "U" SAF's into one SDG, not to exceed rapid turnaround time of 15 days if requested.
Submit invoices & deliverables to DL Stewart, PNNL

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1CLL6		W	4/27/5	0934	1x20-mL P	Activity Scan	None
B1CLL6		W	↓	↓	1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1) G9A9R	HCl to pH <2
B1CLL6		W	↓	↓	1x500-mL G/P	UTOT_KPA: Uranium (1)	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.T. SICKLE		APR 27 2005	1430	Jeff Jensen		APR 27 2005	1430
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 04 27 05 1430

Client: PSNL SDG #: WI04628 NA [ ] SAF #: U05-006 NA [ ]

Work Order Number: JSD270340 Chain of Custody # 405-006-5, 17, 9, 13, 7, 10

Shipping Container ID: SAWS 113 Air Bill # N/A

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 18
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   _____tape
   X custody seals
   _____hazard labels
   X appropriate samples labels
9. Samples are:
   X in good condition
   _____broken
   _____leaking
   _____have air bubbles
   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: _____ Date: 04 27 05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 04 27 05

Client: PGW SDG #: 404628 NA [ ] SAF #: 405-006 NA [ ]

Work Order Number: JSD270340 Chain of Custody # 405-006-25, 29, 21

Shipping Container ID: DTS-SDW #93 Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 9
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   - ____ tape
   - [X] custody seals
   - ____ hazard labels
   - [X] appropriate samples labels
9. Samples are:
   - [X] in good condition
   - ____ broken
   - ____ leaking
   - ____ have air bubbles

   (Only for samples requiring head space)
10. Sample pH taken? NA [ ] pH<2 [✓] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: _____ Date: 04 27 05

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

5/10/2005 8:29:06 AM

Sample Preparation/Analysis

PRIORITY

Balance Id:1120482733

384868, Pacific Northwest National Labortories , Pacific Northwest National Lab

FP Tc-99 Prp/SepRC5065
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

Report Due: 05/12/2005

Sep1 DT/Tm Tech:

Batch: 5118294 WATER pCi/L **PM, Quote: BG2, 57671**

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,ALMQUISTK

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 G9A7L-1-AA			128.60g,in	128.60g						
J5D270327-1-SAMP										
04/27/2005 11:20			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 1.65E+03 pCi/L	Beta: 5.94E+02 pCi/L
2 G9A7N-1-AA			127.80g,in	127.80g						
J5D270327-2-SAMP										
04/27/2005 09:54			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 3.12E+02 pCi/L	Beta: 1.43E+02 pCi/L
3 G9A9E-1-AA			127.40g,in	127.40g						
J5D270340-1-SAMP										
04/27/2005 09:57			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 6.69E+02 pCi/L	Beta: 3.26E+02 pCi/L
4 G9A9E-1-AD-S			126.80g,in	126.80g	TCSG1098 03/24/05,pd 02/15/05,r					
J5D270340-1-MS										
04/27/2005 09:57			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 6.69E+02 pCi/L	Beta: 3.26E+02 pCi/L
5 G9A9E-1-AE-X			129.40g,in	129.40g						
J5D270340-1-DUP										
04/27/2005 09:57			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 6.69E+02 pCi/L	Beta: 3.26E+02 pCi/L
6 G9A9H-1-AA			126.40g,in	126.40g						
J5D270340-2-SAMP										
04/27/2005 11:37			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 2.41E+02 pCi/L	Beta: 9.00E+01 pCi/L
7 G9A9L-1-AA			126.40g,in	126.40g						
J5D270340-3-SAMP										
04/27/2005 09:01			AmtRec: 20ML,2X500P	#Containers: 3				Scr Rst:	Alpha: 2.65E+02 pCi/L	Beta: 6.54E+01 pCi/L

Sample Preparation/Analysis

384868, Pacific Northwest National Labortories , Pacific Northwest National Lab

Report Due: 05/12/2005

FP Tc-99 Prp/SepRC5065
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:1120482733

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,ALMQUISTK

Batch: 5118294 **WATER** **pCi/L** **PM, Quote: BG2, 57671**

SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 G9A9R-1-AA			126.00g,in	126.00g						
J5D270340-4-SAMP										
04/27/2005 09:34		AmtRec: 20ML,2X500P		#Containers: 3				Scr Rst:	Alpha: 7.65E+03 pCi/L	Beta: 2.90E+03 pCi/L
9 G9A9W-1-AA			127.30g,in	127.30g						
J5D270340-5-SAMP										
04/27/2005 09:59		AmtRec: 20ML,2X500P		#Containers: 3				Scr Rst:	Alpha: 2.11E+03 pCi/L	Beta: 8.99E+02 pCi/L
10 G9A90-1-AA			129.00g,in	129.00g						
J5D270340-6-SAMP										
04/27/2005 10:19		AmtRec: 20ML,2X500P		#Containers: 3				Scr Rst:	Alpha: 9.93E+02 pCi/L	Beta: 3.53E+02 pCi/L
11 G9A92-1-AA			125.40g,in	125.40g						
J5D270340-7-SAMP										
04/27/2005 10:45		AmtRec: 20ML,2X500P		#Containers: 3				Scr Rst:	Alpha: 4.12E+02 pCi/L	Beta: 2.05E+02 pCi/L
12 G9A95-1-AA			129.10g,in	129.10g						
J5D270340-8-SAMP										
04/27/2005 12:11		AmtRec: 20ML,2X500P		#Containers: 3				Scr Rst:	Alpha: 6.35E+02 pCi/L	Beta: 3.32E+02 pCi/L
13 G9A99-1-AA			128.40g,in	128.40g						
J5D270340-9-SAMP										
04/27/2005 10:19		AmtRec: 20ML,2X500P		#Containers: 3				Scr Rst:	Alpha: 7.78E+02 pCi/L	Beta: 3.78E+02 pCi/L
14 G9DQ6-1-AA-B			125.00g,in	125.00g						
J5D280000-294-BLK										
04/27/2005 09:57		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:

Sample Preparation/Analysis

FP Tc-99 Prp/SepRC5065
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:1120482733

Pipet #: _____

Report Due: 05/12/2005

Sep1 DT/Tm Tech:

Batch: 5118294 **pCi/L**
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,ALMQUISTK

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15 G9DQ6-1-AC-C J5D280000-294-LCS			125.00g,in	125.00g	TCSE1693 03/22/05,pd 03/10/05,r					
04/27/2005 09:57		AmtRec:		#Containers: 1			Scr Rst:	Alpha:		Beta:
16 G9DQ6-1-AD-BN J5D280000-294-IBLK										
04/27/2005 09:57		AmtRec:		#Containers: 1			Scr Rst:	Alpha:		Beta:
17 G9DQ6-1-AE-BN J5D280000-294-IBLK										
04/27/2005 09:57		AmtRec:		#Containers: 1			Scr Rst:	Alpha:		Beta:

Comments:

All Clients for Batch:
384868, Pacific Northwest National Labortories Pacific Northwest National Lab, BG2, 57671

G9A7L1AA-SAMP Constituent List:
Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20
G9A9E1AD-MS:

G9DQ61AA-BLK:
Tc-99 RDL:15 pCi/L LCL: UCL: RPD:
G9DQ61AC-LCS:
Tc-99 RDL:15 pCi/L LCL:70 UCL:130 RPD:20
G9DQ61AD-IBLK:
Tc-99 RDL:15 pCi/L LCL: UCL: RPD:
G9DQ61AE-IBLK:
Tc-99 RDL:15 pCi/L LCL: UCL: RPD:

G9A7L1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

ICOC Fraction Transfer/Status Report

ByDate: 5/13/2004, 5/18/2005, Batch: '5118294', User: *ALL Order By DateTimeAccepting

Q	Batch	Work Ord	CurStatus	Accepting			Comments
5118294							
AC			CalcC	**ALMQUISTK**	5/10/2005 7:00:21		
SC				heidelbergt	IsBatched	4/28/2005 10:59:59 AM	ICOC_RADCALC v4.8.08
SC				ALMQUISTK	InPrep	5/10/2005 7:00:21 AM	RICH-RC-5017 Revision 4
SC				ALMQUISTK	Prep1C	5/10/2005 1:26:30 PM	RICH-RC-5065 REVISION 5
SC				BlackCL	InCnt1	5/10/2005 1:31:27 PM	RICH-RD-0001 REVISION 3
SC				BlackCL	CalcC	5/12/2005 7:41:53 AM	RICH-RD-0001 REVISION 3
AC				**ALMQUISTK**	5/10/2005 1:26:30 PM		
AC				**BlackCL**	5/10/2005 1:31:27 PM		
AC				**BlackCL**	5/12/2005 7:41:53		

AC: Accepting Entry; SC: Status Change

4/28/2005 11:00:18 AM

Sample Preparation/Analysis

384868, Pacific Northwest National Labortories , Pacific Northwest National Lab

DH UNat_Laser PrpRC5015
SS Total Uranium by KPA
5I CLIENT: HANFORD

PRIORITY

Balance Id:

Pipet #: _____

Report Due: 05/12/2005

Sep1 DT/Tm Tech:

Batch: 5118295 WATER ug/L

PM, Quote: BG2, 57671

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

1 G9A7L-1-AC

J5D270327-1-SAMP

04/27/2005 11:20 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

2 G9A7L-1-AD-S

J5D270327-1-MS UNSF 2362

04/27/2005 11:20 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

3 G9A7L-1-AE-X

J5D270327-1-DUP

04/27/2005 11:20 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

4 G9A7N-1-AC

J5D270327-2-SAMP

04/27/2005 09:54 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

5 G9A9E-1-AC

J5D270340-1-SAMP

04/27/2005 09:57 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

6 G9A9H-1-AC

J5D270340-2-SAMP

04/27/2005 11:37 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

7 G9A9L-1-AC

J5D270340-3-SAMP

04/27/2005 09:01 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta:

4/28/2005 11:00:19 AM

Sample Preparation/Analysis

384868, Pacific Northwest National Labortories , Pacific Northwest National Lab

DH UNat_Laser PrpRC5015
SS Total Uranium by KPA
5I CLIENT: HANFORD

PRIORITY

Balance Id:

Pipet #: _____

Report Due: 05/12/2005

Sep1 DT/Tm Tech:

Batch: 5118295 WATER ug/L
SEQ Batch, Test: None

PM, Quote: BG2, 57671

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 G9A9R-1-AC J5D270340-4-SAMP 04/27/2005 09:34		AmtRec: 20ML,2X500P	#Containers: 3			Scr Rst:	Alpha:	Beta:
9 G9A9W-1-AC J5D270340-5-SAMP 04/27/2005 09:59		AmtRec: 20ML,2X500P	#Containers: 3			Scr Rst:	Alpha:	Beta:
10 G9A90-1-AC J5D270340-6-SAMP 04/27/2005 10:19		AmtRec: 20ML,2X500P	#Containers: 3			Scr Rst:	Alpha:	Beta:
11 G9A92-1-AC J5D270340-7-SAMP 04/27/2005 10:45		AmtRec: 20ML,2X500P	#Containers: 3			Scr Rst:	Alpha:	Beta:
12 G9A95-1-AC J5D270340-8-SAMP 04/27/2005 12:11		AmtRec: 20ML,2X500P	#Containers: 3			Scr Rst:	Alpha:	Beta:
13 G9A99-1-AC J5D270340-9-SAMP 04/27/2005 10:19		AmtRec: 20ML,2X500P	#Containers: 3			Scr Rst:	Alpha:	Beta:
14 G9DRG-1-AA-B J5D280000-295-BLK 04/27/2005 11:20		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:

Sample Preparation/Analysis

DH UNat_Laser PrpRC5015
SS Total Uranium by KPA
5I CLIENT: HANFORD

PRIORITY

Balance Id:

Pipet #: _____

Report Due: 05/12/2005

Sep1 DT/Tm Tech:

Batch: 5118295 **ug/L**
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15 G9DRG-1-AC-C J5D280000-295-LCS 04/27/2005 11:20		UNSF2363 AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
16 G9DRG-1-AD-C J5D280000-295-LCS 04/27/2005 11:20		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:
384868, Pacific Northwest National Labortories Pacific Northwest National Lab, BG2, 57671

G9A7L1AC-SAMP Constituent List:
Uranium RDL:1.44E-01 ug/L LCL: UCL: RPD:
G9A7L1AD-MS Constituent List:

G9DRG1AA-BLK:
Uranium RDL:1.44E-01 ug/L LCL: UCL: RPD:
G9DRG1AC-LCS:
Uranium RDL:0.144343 ug/L LCL:70 UCL:130 RPD:20
G9DRG1AD-LCS:
Uranium RDL:0.144343 ug/L LCL:70 UCL:130 RPD:20

G9A7L1AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
G9A7L1AD-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
G9DRG1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
G9DRG1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
G9DRG1AD-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Sample Preparation/Analysis

DH UNat_Laser PrpRC5015
SS Total Uranium by KPA
5I CLIENT: HANFORD

PRIORITY

Balance Id:

Pipet #: _____

Report Due: 05/12/2005

Sep1 DT/Tm Tech:

Batch: 5118295 **ug/L**
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Approved By _____ **Date:** _____

ICOC Fraction Transfer/Status Report

ByDate: 5/10/2004, 5/15/2005, Batch: '5118295', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
5118295						
AC		**Cnt1C**	**ALMQUISTK**	5/4/2005 2:00:53 PM		
SC			heidelbergt	IsBatched	4/28/2005 10:59:59 AM	ICOC_RADCALC v4.8.08
SC			ALMQUISTK	Prep1C	5/4/2005 2:00:53 PM	RICH-RC-5015 REVISION 4
SC			IOVINC	InCnt1	5/6/2005 6:18:24 AM	RICH-RC-5058 REVISION 6
SC			IOVINC	Cnt1C	5/9/2005 1:23:43 PM	RICH-RC-5058 REVISION 6
AC			**IOVINC**	5/6/2005 6:18:24 AM		
AC			**IOVINC**	5/9/2005 1:23:43 PM		

AC: Accepting Entry; SC: Status Change